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An Introduction to Teaching Vocational Technical Education, a Pre-Service Teacher Training Course for Potential Vocational Teachers in Minnesota. Final Report.

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The purpose of this project was to revise and reformat 12 instructional units for the professional, pre-service education of potential vocational teachers in Minnesota. These 2-hour units include 30-minute filmed presentations. Developmental activities included the trial use of these units on 60 potential teachers in four separate classes. The materials included in addition to the films a detailed course of instruction, achievement tests, instructional materials, and a leader's guide. The units are: (1) Teaching in Vocational-Technical Schools, (2) Analyzing for Instruction, (3) Organizing Course Components, (4) Planning the Lesson, (5) Teaching for Understanding, (6) Teaching for Motor-Skill Development, (7) Teaching With Instructional Aids, (8) Developing Instructional Aids, (9) Evaluating Instructional Outcomes, (10) Developing Evaluative Materials, (11) Managing Teaching-Learning Facilities, and (12) Planning Your Teaching Career. The appendix (VT 005 768) contains (1) course objectives, (2) unit objectives, (3) a list of lesson materials, (4) unit examinations, and (5) film scripts with cues indicating when to use visual aids. (EM)

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Final Report

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Vocational Division
State Department of Education

Saint Paul, Minnesota

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I. Introduction

The Problem

This development project was undertaken for the purpose of developing a mass media of instruction for the professional pre-service training of vocational and technical teachers. The term, "mass media" used in this project refers to the instructional use of video tapes and television transmission and 16 mm sound film copies of the video taped presentations with integrated seminar discussion sessions. The total project was a combined venture with the Minnesota State Department, Vocational Division, the staff of the Department of Trade and Industrial Education, University of Minnesota, and personnel from KTCA, the Minnesota Educational Television Station, St. Paul. Funds for the support of the project were supplied by the U. S. Office of Education and the State of Minnesota through a grant under Section 4(c) of the Vocational Education Act of 1963. (Letter indicating approval of Department of Industrial Education included in Appendix B.)

The specific purpose of this project was the organization, presentation and revision of a course of instructional units (training lessons) for the professional, pre-service education of potential vocational teachers in Minnesota. To accomplish this main purpose of the project, activities involving discussion, writing and performance were carried out in the following areas: the, (1) development of twelve, two-hour instructional units by a group of ten competent instructors, experienced in the pre-service activity of vocational teacher education, (2) presentation of 12, one-half hour television lessons to 60 new and inexperienced, potential vocational teachers for four separate classes in widely separated areas in Minnesota, (3) conduct and provide leadership for 48 seminar discussion sessions for the four separate classes, (4) tryout and revision of the twelve instructional units, and, (5) development of a teaching guide for the twelve course units.

The need for the development of a pre-service course and the mass instructional techniques had its origin in the rapidly growing number of vocational schools in Minnesota. During the year of this project, the number of Area Vocational-Technical Schools increased from 17 to 24. As of the present date, the number has grown to 27. This original 41 percent increase in new schools, coupled with the program expansion in the existing schools and other secondary vocational school programs, was foreseen by the staff of Trade and Industrial Education and served as sufficient justification for this project. Even though the vocational program expansion in Minnesota had its start before the passage of the Vocational Education Act of 1963, this legislation, and that of the Economic Opportunity Act and the Manpower Development and Training Act caused a shortage of qualified vocational teachers. This became an accute problem. Since vocational education

programs are traditionally dependent upon recruitment of trade-competent and highly skilled workers from business and industry for their teaching staff, as these former workers begin the new task of teaching their speciality, they are in need of immediate teacher training. The problem of training greater numbers of these new teachers is compounded by the fact that the need for training is immediate; for optimum effectiveness, it cannot be delayed.

Minnesota has an excellent vocational teacher education program in the Department of Trade and Industrial Education, University of Minnesota. The staff of this department has served the State well in providing the first elements of the vocational teacher training service as well as the other offerings for certification purposes at all levels. However, with the sudden increase in demand, and even with an increased staff and facilities, this department could only continue to meet its obligations through mass media presentations, prepared seminar and discussion techniques and materials, and self instructional methods.

The initial pre-service course and teacher education materials developed for this project represents only one part of a larger, more comprehensive plan for the total program development for vocational teacher education in Minnesota. Other proposals for projects in the total development plan are shown in Chart I from Appendix B. These include further course development and service to isolated teachers making use of self instructional techniques.

The methods and activities engaged in for this project were planned to result in the following four kinds of products. (1) A detailed course of instruction, using a "Teaching Guide" format for use of the vocational teacher educator presenting the first course of 12 units covering 24 clock hours of the pre-service teacher education service. (2) A series of achievement tests including eleven unit tests and one comprehensive final examination for the measurement of achievement of course and unit objectives. (3) A series of instructional materials including 12, one-half hour video tapes and sound film copies, complete scripts of video presentations, sample class handout materials in the form of summaries, charts and activity work sheets. (4) A Seminar Discussion Leader's Guide with suggested methods for using the course materials.

A review of the literature covering vocational education research and development programs in process revealed no evidence that an attempt had been made on a State-wide basis to use modern mass media to extend the services of vocational teacher training by that method. To the best knowledge of the staff, no attempt has been made either to study the potential benefits which might accrue from using centralized vocational teacher training instruction to supplement the services typically given by the University teacher trainers. Therefore, this project was envisioned to seek to resolve the difficult problem of providing

immediate, effective training for the beginning teachers, when this must be done outside of a regular, teacher training schedule as often happens in the State.

II. Method of Approach

To develop the four major elements for this project, the following methods and procedures were used:

(1) The pre-service course of instruction was outlined and organized by the vocational teacher training staff of the Department of Industrial Education. Eight staff members, each with about fifteen years of current experience in the presentation of pre-service, vocational teacher training content, worked in concert to develop the course objectives, course units, and detailed course content and the course format.

Graduate students, staff, graduate teaching assistants and selected Area Vocational School Directors critiqued these materials at regular intervals. During weekly staff meetings, additional discussions helped to further improve the selection of course content as well as suggest possible teaching procedure. The course outline in tentative form was analyzed and improved by interested teacher educators from the University of Minnesota, Duluth, and by participants in the Annual Trade and Industrial Conference in the Spring of 1966.

Basic Objectives

Prior to the final adoption of units of instruction, considerable time was devoted to the identification of basic objectives for the entire series. These are always of utmost importance in the development of instructional materials and are considered worthy of restating here at this time. As a result of having participated in the television sessions, a student should:

A. Understand and be able to use vocational and educational terminology as needed by the beginning vocational or technical school instructor.

B. Develop initial appreciations of the power and efficiency of sound educational practices and principles with regard to vocational and technical school teaching.

C. Understand the place and nature of vocational and technical school programs in the total program of public education.

D. Know the basic elements of an instructional analysis and be able to make an analysis of work and technical information.

E. Understand the principles underlying organization of content for teaching.

F. Understand the first principles involved in selected vocational-technical school teaching methods.

G. Know the principles and procedures involved in making a daily lesson plan.

H. Understand the kinds and types of audio and visual instructional aids and their place in a teaching method.

I. Understand the techniques involved in making and using projected instructional aids.

J. Understand the nature and type of evaluative instruments suitable for the measurement of skill and affective behavior.

K. Know the common types of tests used to measure cognitive and skill learnings.

L. Understand and be able to judge techniques for laboratory and classroom management.

M. Be able to plan a program of self evaluation and self improvement for vocational and technical school teaching as a career.

Final Course Specifications

Final specifications for the complete course which were adopted included the following:

A. The total course should be developed around 24 clock hours of instructional time and be given two quarter credits if credit award or equivalency is needed.

B. It should include 12 sub-divisions of two clock hours each to be identified as course units or training lessons.

C. Each course unit should include one-half hour of formal, structured presentation by an expert for the content of that unit.

D. Each course unit should also include one and one-half clock hours of guided seminar discussion and activity.

E. Each course unit except the last should be evaluated against unit objectives by an objective unit test.

F. The seminar-discussion session for Unit 12 should include a comprehensive objective examination covering the whole course.

In addition to these course specifications, additional qualifications about the course were included to insure a base for further development and research projects. (1) The objectives for the entire course should be specified as accurately and completely as possible, especially very specific clarification of course objectives for each unit. This would be an absolute necessity for better validation of each unit test as well as the final examination. Also, this specification would also provide the best base for later development of self-instructional materials.

Through this process, given under method of approach, the following course units were established and accepted by the planning committee:

Unit 1 - Teaching in Vocational-Technical Schools

Unit 2 - Analyzing for Instruction

Unit 3 - Organizing Course Components

Unit 4 - Planning the Lesson

Unit 5 - Teaching for Understanding

Unit 6 - Teaching for Motor Skill Development

Unit 7 - Teaching with Instructional Aids

Unit 8 - Developing Instructional Aids

Unit 9 - Evaluating Instructional Outcomes

Unit 10 - Developing Evaluative Materials

Unit 11 - Managing Teaching-Learning Facilities

Unit 12 - Planning Your Teaching Career

(2) Tests and examinations covering the content of the 12 units were constructed using four-element, multiple choice type items which insured ease of use when viewed against unit objectives. Also, for self-instructional uses, the best answer of four possible was helpful to students since it provided shades of interpretation, but only one complete and correct reply. (3) The first reliability and validity checks and reporting on objectives and evaluative tests, while not as rigidly controlled as would be desirable, could result in a sounder base for further developmental work.

Student-Participant Selection

Four Area Vocational-Technical School centers were selected for the initial try-out presentations of the television course. These centers included Minneapolis, St. Paul, St. Cloud and Mankato. Eighty students, twenty for each center, were originally recruited and selected using a procedure developed by the State Director of Vocational Education.

When the decision was reached to conduct the television series, the State Director, Project Manager, and two instructors recorded a thirty-second promotional announcement for projection over commercial and educational T.V. channels. These announcements were designed to recruit students; a heavy response gave evidence of their success.

Potential students, thus identified, were asked to write a letter expressing interest in the television series to the State Department, Division of Vocational and Technical Education. Upon receipt of this letter, interested persons were mailed an Application for Vocational Teacher's Certificate Form. (A copy of this form has been included in Appendix C and also a letter of notification)

The purpose for using this particular form was to obtain specific information about their amount of basic education, practical work experience, amount and kind of instructor training and teaching experience, if any. In the recruitment process, it was felt that only those persons who were possessed of the basic capabilities and characteristics to be employable as instructors upon satisfactory completion of the training series should be selected.

From the heavy response to the spot announcements and subsequent letters, eighty potential candidates were identified and properly notified following a careful evaluation of the information provided on the certificate form. This process was conducted by the Vocational Division staff. Ultimately, twenty people were lost because they could not participate on the Monday-Wednesday schedule set up for the television transmission.

Class Size and Distribution

For the actual television presentations, class size ranged as follows: 14 - 17 - 20 and 22 at the four centers.

As to fields of competence, ten gave machinist, nine wrote electronics, eight listed automechanics, seven gave drafting, five listed nursing, three came from graphic arts, carpentry and business, two each listed civil engineering, cosmetology, chef, and there was one each from vocational placement, refrigeration, sewing, stationary engineer, optical technician and foods.

Video Production

The written presentations of content for each of the course units were developed in detail by the instructors whose names are listed in Appendix D. Each person wrote his own video and audio script based upon course and unit objectives. The same objectives served as the blue-print for the unit test developed by each instructor.

The project manager, working closely with each instructor, arranged for the preparation of charts, slides, on-location film clips and other visual needs for the presentation. Then, the prepared, formal lessons were recorded on commercial video tape for television transmission to students at a later date. Prior to on-the-air transmission, several of these tapes were re-recorded to improve the technical recording and presentation problems. In this manner, all 12 formal presentations were completed so that when the schedule of lessons was released, all units were presented in the pre-determined sequence to preserve course continuity.

Seminar Discussions

The one and one-half hour seminar discussions following each unit presentation were conceived to be perhaps the most important single element of the entire series. In keeping with this conclusion, the teaching guide provides a "Suggested Method of Approach", which incorporates topical items for use of the seminar leader and specific activities for students to participate in to assist the leader in making this session a worthwhile and profitable period for participants.

Modification of Taped Lessons

During each of the seminars following each unit presentation, extensive notes were taken by all seminar leaders to record questions raised by students. Careful entries were made when it appeared that the presenter had not made one or more points completely clear. In some cases, the presenter might have assumed that students knew more about a given topic than they actually did. In other cases, additional information was needed as evidenced by student questions.

In all cases where these questions were crucial to a thorough understanding of a particular point or points, the television tape was remade to incorporate the necessary additional information. In this manner, it must be assumed that a majority of deficiencies in presentation were thus eliminated.

Development of Unit Tests

Unit tests covering each of the 12 television presentations were prepared by the instructors, and in all cases, were based upon course and unit objectives as adopted earlier. Since all objectives were clarified in detail by each instructor, the problem of unit test construction presented minimal difficulty. Also, this procedure insured that all test items would provide measures of each major topic specified in the clarified objectives.

Mechanically, the twenty test items for each unit consisted of four-foil, multiple choice type questions. This type of item was selected in order to minimize guessing, but more importantly, to provide shades of meaning and only one complete, correct answer. This was helpful during seminar discussions because then it became possible to focus discussion on the one correct answer while showing why the other answers were not quite sufficient.

Development of Final Achievement Examination

The final examination administered following the Unit 12 presentation, consisted of the sixty best discriminator items identified during the item analysis process employed with the unit examinations.

Actually, a fairly normal distribution of items with respect to difficulty and discrimination value was incorporated into the final examination. This instrument was used to measure the over-all achievement of students through all 12 units.

Development of Teaching Guide

Each presenter, as he developed the materials for his unit or units, assumed responsibility for developing a complete teaching guide covering his lesson presentations. As a result, every unit became a complete package of materials suitable for use by a regular teacher trainer or a local area school person acquainted with and experienced in the service.

Every teaching guide consists of the following items: (1) Introduction to the Unit, (2) Clarified Objectives, (3) Lesson Materials Needed, (4) Method of Approach, (5) Resource Appendix, (6) Unit Examination, (7) Answer Sheet, (8) Test Key, (9) Audio and Video Script, (10) Introduction-Summary of Succeeding Unit.

Twelve complete Teaching Guides, one for each of the instructional units, have been included as Appendix A.

III. Project Results and Problems

Technical Problems - Video Presentations

While the advantages far out-weighted the disadvantages encountered during the video presentations, several technical problems did arise and would have been greater had we televised to more than four centers.

On several occasions, interference and televsion malfunctions resulted in poor reception at two centers. Typically, when using regular television, the programs must be shown at times permitted by the station's schedule. One cannot select the "most desirable" time since this hour often constitutes "prime time" wanted by all subscribers. We used the hour of 5:30 to 6:00 p.m., Monday and Wednesday each week for the television series.

Teacher trainers may not be outstanding television performers because of the unique requirements of the new media. While all went well, one might wish to use professional personnel for these presentations.

With respect to its advantages, all persons involved felt that the media of television became a powerful recruiting device since the response was so satisfactory. Also, the persons recruited in this way proved to be quite outstanding individuals whom we should draw into vocational teaching.

Since all television tapes have been re-recorded on 16 mm film, many of the problems associated with television transmission will have been eliminated completely. At the same time, during the re-recording process, there was some loss in quality in going from T.V. tape to film.

Technical Instructional Materials

Some minor problems arose with respect to instructional materials, all of which have been eliminated in final copies. For example, while the project manager gave assistance to the development of charts and graphs, some of these were found to be difficult to read because of size, color or arrangement of content. Video materials often contained too much content which made effective use difficult. Problems of this type necessitated the remaking of several tapes.

Certain film clips taken on-location did not reach expectations of the presenter who had wanted to illustrate a special point or the development of a concept. These clips did not always satisfy the purpose for including them.

However, before the T.V. tapes were made into 16 mm films, virtually all of these technical problems were eliminated

Test Item Analysis

Following each unit presentation, an objective test of twenty items was administered in an effort to appraise comprehension and understanding. These sixty tests were pooled by one staff member who then performed an item analysis on them. To facilitate the process, answers were recorded on Digitek sheets which were then run through the University's equipment using Program #3 to produce frequencies, discrimination values, difficulty levels and other associated statistics.

The process enabled the person to determine how each of the items performed as a basis for unit test revision or modification of the presentation covering that point. This was perhaps the most significant outcome associated with the unit tests; they provided considerable insight into how well the students understood and, of course, how well the presenter put his points across.

Pending research to support or disprove, all presenters were well pleased by the high level of understanding exhibited by participants. Although unofficial at this stage, the evidence on unit tests seems to indicate this very clearly.

IV. Summary and Conclusions

Teaching Materials

Perhaps the major outcome of this project has been the production of a comprehensive kit of teaching materials covering the 12 basic areas selected as important in vocational teacher education.

These instructional materials, complete in every way, should make it possible for any knowledgeable coordinator or director of a vocational program to conduct an effective initial 24 clock hours of teacher training. Inasmuch as there will be multiple copies of these materials produced, there should be the utmost flexibility possible in their use.

Having now re-recorded all T.V. tapes on 16 mm film, the trainer can use any or all of the visual materials whenever convenient or necessary. There are regularly occurring cases where an instructor must be hired at the last moment to fill a vacancy or to take the place of someone who must be off the job for a time. University trainers cannot always respond to those needs on short notice when teacher training must be provided.

The teaching materials prepared in this T.V. project should prove most helpful in these circumstances. They should make it possible to provide emergency services in these instances.

Later when organized, full-fledged courses are offered, the instructor in question can then participate like any other teacher. In the meantime, he has received the initial 24 clock hours which will give him the first certificate.

Needs Served

Sixty, pre-selected, well-qualified potential vocational instructors participated in the television training program. While the greatest benefit of the series may have been its recruitment values, this initial group of sixty people who satisfactorily completed the series constitutes an excellent resource of trained people to which directors may turn for teachers.

Of the original group of sixty, nearly one-third have already taken additional formal courses on the University campus or those set up off-campus through extension. Actually, this was one of our early objectives -- to get these students into a continuation of their preparation following the introductory television series.

From the original group, about six have been hired for teaching while an additional four or five are being considered for jobs. For years we have been attempting to develop a backlog of trained and interested people; it now appears that such a group now exists.

As additional courses are set up on and off-campus, we expect to contact these T.V. students and encourage them to continue their teacher preparation. And, if requests for additional offerings over television affords any indication of interest, we shall continue the development of a resource of trained people.

Project Continuity

From its inception, the present training project has been envisioned as a part of a broader program planned to encompass the development, refinement and evaluation of alternate methods of providing effective teacher training. There are small and diverse groups of potential teachers scattered throughout the State who should be reached in some manner. A chart outlining this expanded concept of teacher education and research has been included as Appendix E, Chart I.

In keeping with this continuation of the project, proposals should be prepared and submitted to include: (1) a proposal to develop activity instruction sheets, (2) a proposal to develop programmed instruction with home-study activity, (3) a research proposal to make a comparative analysis and evaluation

of the learning efficiency and effectiveness, and the relative costs of the three instructional methods of: (a) video tape and television transmission, (b) regular teacher trainer presentation with activity instruction sheets, (c) programmed instruction with home-study activities.

Further Evaluation

The television project staff expects to maintain contact with persons included in the training sessions for the purpose of determining whether their adjustment to and performance in teaching differs in significant ways from those entering teaching through the usual channels.

The Research Coordination Unit for Minnesota which has its offices on the University campus may well provide the leadership and guidance for this evaluation process. Well qualified graduate students seeking a topic may also become involved in one or more research studies involving the effectiveness of television and filmed lessons compared with the other approaches.

Conclusion and Recommendations

1. The evidence seems quite clear that the television series constituted an effective, new approach to vocational teacher education.

2. At this stage, there is no evidence to suggest that this method of training is either superior or inferior to the customary approach to training.

3. Pending the findings from one or more research studies focused on this problem, one can only assume at this time that teacher training using pre-recorded lessons with supporting instructional materials simply constitutes another approach to vocational teacher training. It may be but one of many potentially effective means of conducting this service.

4. It seems logical to assume that the recorded lessons should prove more effective than the customary teacher training in one aspect. In the filmed materials, several instructors who were possessed of unique depth and instructional competencies were used. In the typical teacher training situation, one person would ordinarily carry all instruction.

5. Because of its initial, apparent success, the television (now 16 mm film) lessons should be run again, especially outside the metropolitan area, and observe its effectiveness as a recruiting media and training procedure in this new application.

6. The series should be utilized with small groups in isolated geographical locations for the preparation of potential instructors from these areas.

7. It would be recommended that the supporting proposals outlined in "Project Continuity" above be initiated almost immediately to provide the logical continuation for the project.

Project Summary

Project Title: The Development of Training Lessons for Pre-Service and Initial In-Service Vocational Teacher Education Recorded and Presented Through Video Tape and Television with Seminar Discussions

This developmental project was undertaken for the purpose of developing a mass media of instruction for the professional, pre-service training of vocational and technical teachers. The term, "mass media" refers to the instructional use of video tapes and television transmission and 16mm sound film copies of the video presentations with integrated discussion seminars.

The total project represented a combined venture of the Minnestoa State Department of Education, Vocational Division, the staff of the Department of Industrial Education, University of Minnesota, and personnel from KTCA, the Minnesota Educational Television Station, St. Paul. Funds to support the project were supplied by the U. S. Office of Education and the State of Minnesota through a grant under Section 4(c) of the Vocational Education Act of 1963.

Specific Purpose of Project

The specific purpose was the organization, presentation and revision of a course of twelve instructional units (training lessons) for the professional, pre-service education of potential vocational teachers in Minnesota.

In order to accomplish this purpose, activities involving discussions, writing and performance were carried out in the following areas: (1) the development of 12, two-hour instructional units by a group of 10 competent instructors, experienced in the pre-service activity of vocational teacher education, (2) presentation of 12, one-half hour recorded television lessons to 60 new and inexperienced, potential vocational teachers for four separate classes in widely separated areas in Minnesota, (3) conduct and give leadership for 48 seminar discussions for the four separate classes, (4) tryout and revision of the 12 instructional units, and, (5) development of a teaching guide for each of the 12 course units.

Method of Project

Before any decision was reached about the twelve major units of instruction to be incorporated into the series, thirteen basic objectives were identified and adopted as support and guidance for the entire series. Following considerable debate

and discussion with knowledgeable teacher educators, the following instructional units were accepted and utilized in the final series:

Unit 1 - Teaching in Vocational-Technical Schools

Unit 2 - Analyzing for Instruction

Unit 3 - Organizing Course Components

Unit 4 - Planning the Lesson

Unit 5 - Teaching for Understanding

Unit 6 - Teaching for Motor-Skill Development

Unit 7 - Teaching with Instructional Aids

Unit 8 - Developing Instructional Aids

Unit 9 - Evaluating Instructional Outcomes

Unit 10 - Developing Evaluative Materials

Unit 11 - Managing Teaching-Learning Facilities

Unit 12 - Planning Your Teaching Career

Initially, 80 trade competent persons, interested in becoming vocational teachers, were identified by the staff of the Vocational Division, State Department of Education. All persons thus selected had to have sufficient, recent trade or industrial experience to make them employable upon satisfactory completion of the television training lessons.

Approximately twenty of these potential instructors were located in or near each of the four Area School centers of St. Paul, Minneapolis, St. Cloud, or Mankato where the initial training sessions were to be conducted. KCTA, the Minnesota educational television station, made available the hours of 5:30 to 6:00 p.m. Mondays and Wednesdays for the transmission of the weekly lesson. Eventually, because of the hour and the days selected, 20 of the original 80 people were unable to participate and were lost to the project.

All necessary arrangements and provisions were made in the four centers to accommodate the seminar groups. In some cases the participants watched the television lessons as a group, but more often, they did this individually at home and then came together for the seminar later.

Seminar leaders, all University instructors, were identified for each of the sessions to follow each weekly broadcast and each was provided with: (1) an audio and video script,

(2) discussion outline, (3) unit test, (4) answer sheets, (5) test key, (6) an introduction to the next unit.

Starting on March 7, 1966 and continuing through May 23, 1966, each of the twelve training lessons were broadcast twice a week and followed, the same or next night, by one seminar in each of the four Area School centers. Each seminar started with the administration of (20 item, four element, multiple choice) test to assess understanding of the lesson presentation. Following the test, major points of the lesson were discussed by the group as were all other unclear or inadequately covered items.

Project Outcomes

One hundred percent of the 60 participants initially selected were given 24 clock hours of pre-service, vocational teacher training under this project. Motivation ran extremely high throughout as evidenced by the retention record.

Seventeen trade and industrial areas were represented among the participants who ranged from ten mechanists down to one each of optical technician, refrigeration technician, stationary engineer, foods worker, power sewing operator and vocational placement. The use of television appeared to constitute a powerful recruiting device because of the high quality of person attracted.

Six of those trained in this manner have been hired for teaching, another four or five are currently being considered for employment while nearly a third of the original group have taken additional preparation in University sponsored courses, on and off-campus.

One intermediate outcome of the project has been the transfer of all television tapes to 16 mm sound film which increases the potential flexibility of use enormously. The series can be utilized at any appropriate time or on any convenient schedule.

The major outcome, which includes the above, involves the preparation of complete instructional kits of materials for every unit. These are in the form of teaching guides which consist of the following items: (1) Introduction to the Unit, (2) Clarified Objectives, (3) Lesson Materials Needed, (4) Method of Approach, (5) Resource Appendix, (6) Unit Examination, (7) Answer Sheets, (8) Test Key, (9) Audio and Video Script, (10) Introduction-Summary of Succeeding Unit.

All films and teaching guides will be reproduced in quantity and become available for use in vocational teacher training by request to the Vocational Division, State Department of Education, Centennial Building, St. Paul, Minnesota 55101.

Significance of Project

While the present project of training sixty potential teachers has been rated by everyone associated with it as a truly successful venture, this project must be viewed within the context of a much more comprehensive plan for vocational teacher training and research.

The instructional materials which have come from this unit, while complete in every detail and immediately usable for the initial twenty-four clock hours of teacher training, represent but the first stage of an over-all plan.

Research proposals should be prepared and initiated to include: (1) a proposal to develop activity instruction sheets, (2) a proposal to develop programmed instruction with home-study activity, (3) a research proposal to make a comparative analysis and evaluation of the learning efficiency and effectiveness, and the relative costs of the three instructional methods of: (a) video tape and television transmission, (b) regular teacher trainer presentation with activity instruction sheets, (c) programmed instruction with home-study activities.

UNIVERSITY OF Minnesota

COLLEGE OF EDUCATION
DEPARTMENT OF INDUSTRIAL EDUCATION • MINNEAPOLIS, MINNESOTA 55455

To Whom It May Concern:

This letter will serve to indicate that I give my complete approval and support to the proposed project entitled:

The Development of Training Lessons for Pre-Service and Initial In-Service Vocational Teacher Education Recorded and Presented Through Video Tape and Television with Seminar Discussions

As this proposal was being developed, my staff and I took active part through discussions of every aspect and arrangement so that all are in complete agreement about its provisions.

Sincerely yours,

Howard F. Nelson

Howard F. Nelson
Professor and Chairman

HFN:mav

OVERVIEW OF PLAN FOR VOCATIONAL TEACHER EDUCATION MATERIALS AND EVALUATION

TAPE PRESENTATION PRESENT PROPOSAL	TEACHER PRESENTATION TENTATIVE PROPOSAL	PROGRAMMED INSTRUCTION TENTATIVE PROPOSAL	TOTAL PLAN EVALUATION TENTATIVE PROPOSAL
1. Teaching Content Objectives Clarified Objectives Validation	6. Learning Content and Examination Validation		
2. Video Tape TV Transmission	7. Teacher With Instructional Aids	11. Programmed Instruction	15. Tape vs. Teacher Presentation
3. Seminar for Evaluation	8. Activity Instruction Sheets	12. Home Study Guide	16. Tape vs. Programmed Instruction
4. Tape Revision Improvement	9. Evaluation	13. Evaluation	17. Teacher vs. Program Instruction
5. 16mm Copies of Tapes	10. Teacher Guide Production	14. Program Revision Home Study	18. Comparative Efficiency and Costs

Proposal #1 Materials Developed	Proposal #2 Materials Developed	Proposal #3 Materials Developed	Proposal #4 Overall Evaluation
S.K. Wick (applicant) State Department of Education	College of Education University of Minnesota W.A. Kavanaugh Industrial Education Department	College of Education W.A. Kavanaugh Industrial Education Department	College of Education W.A. Kavanaugh Industrial Education Department

Chart I

Appendix C 2

STATE OF MINNESOTA
DEPARTMENT OF EDUCATION
CENTENNIAL OFFICE BUILDING
ST. PAUL, MINN. 55101

We appreciate your interest in our television teacher training program and hope that you will complete the enclosed application form and submit it to our office as soon as possible. However, before you do so we must be sure that if you are selected you will be able to view each lesson over television and will attend each seminar. The seminars will be held at one of the following places:

Monday - Minneapolis Vocational High School and Technical Institute, Third Avenue South and 11th Street - 7:00 - 8:30 p.m.

Tuesday - Mankato Area Vocational-Technical School - 7:00 - 8:30 p.m.

Wednesday - Mechanic Arts High School, 97 Central Avenue East, St. Paul - 7:00 - 8:30 p.m.

Thursday - St. Cloud Area Vocational-Technical School - 7:00 - 8:30 p.m.

The broadcasts will be held on Mondays and Wednesdays, 5:30 - 6:00 p.m. Those attending the seminars on Mondays and Tuesdays will have to view the Monday broadcasts. Those attending the seminars on Wednesdays and Thursdays will have to view the Wednesday broadcasts. Twelve such broadcasts and seminars will be held on successive weeks starting March 7. Twenty-four clock hours of teacher training will be accredited to each prospective teacher upon satisfactory completion of the course.

When we receive your completed application we will evaluate your training and work experience. It is not necessary that you have a college degree in order to be qualified as a teacher. We will notify you as soon as possible after receiving your application whether or not you will be accepted for the training and will inform you which school to attend. There will be no cost to you except for your personal expenses. The number in each class must necessarily be limited to 15 so answer promptly if you wish to be considered.

S. K. Wick, State Director
VOCATIONAL EDUCATION

amv

State of Minnesota
Department of Education
Instruction Division
Vocational Education

Code XXXIX-C-

APPLICATION FOR VOCATIONAL TEACHER'S CERTIFICATE

Business and Office Education

Appendix C 1

I hereby make application for a certificate authorizing me to (teach (list areas) (act as coordinator _____

_____ _____ in the

( ) high school ( ) day post high ( ) supplementary training for youth and adults vocational classes conducted under public supervision and control at _____ , Minnesota.

My preparation has been as follows (additional space is provided on reverse side):

I. Practical Experience:

Business or Office Occupation	Place	Dates	Length of Time	References--Addresses

II. Education:

School Attended	Place	Dates	Course or Major	Diploma or Degree
High school _____				
College _____				

III. Instructor Training (If applying for provisional certificate only):

Courses	Institution	Instructor	Credit	Dates	Attested by

IV. Teaching Experience:

Subject	Place	Dates	Length of Time	References--Addresses

Fee for Issuance of this certificate is $3.00. Please enclose check or money order payable to State Treasurer.

Signature of Applicant Mr. Miss Mrs. _____ Age _____

Last Name First Middle

V. Other experience or preparation not noted in the foregoing statements, but which I think helps to qualify me for this position:

APPENDIX D

Instructors

r. William A. Kavanaugh rofessor	Unit 2 - Analyzing for Instruction Unit 3 - Organizing Course Components
r. Jerome Moss, Jr. rofessor	Unit 4 - Planning the Lesson Unit 5 - Teaching for Understanding
r. Howard F. Nelson rofessor and Chairman	Unit 1 - Teaching in Vocational-Technical Schools Unit 12 - Planning your Teaching Career
r. Neville P. Pearson ssociate Professor	Unit 7 - Teaching with Instructional Aids Unit 8 - Developing Instructional Outcomes
r. David J. Pucel ssistant Professor	Unit 6 - Teaching for Motor-Skill Development
r. Robert R. Randleman ssistant Professor	Unit 9 - Evaluating Instructional Outcomes Unit 10 - Developing Evaluative Materials Unit 11 - Managing Teaching-Learning Facilities

OE 6000 (REV. 9-66)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION

ERIC REPORT RESUME

(TOP)

ERIC ACCESSION NO.

CLEARINGHOUSE ACCESSION NUMBER

RESUME DATE: 5/27/68 | P.A. | T.A.

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TITLE

100 The Development of Training Lessons for Pre-service and Initial In-service
101 Vocational Teacher Education Recorded and Presented Through Video Tape and
102 Television with Seminar Discussions
103

PERSONAL AUTHOR(S)

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RETRIEVAL TERMS

600 vocational education
601 industrial education
602 teacher education-vocational education
603 teacher education by video tape and television
604 television teacher training
605
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IDENTIFIERS

607

ABSTRACT

800 The purpose of this project was the organization, presentation and revision of a
801 course of twelve instructional units (training lessons) for the professional,
802 pre-service education of potential vocational teachers in Minnesota. Twelve,
803 two-hour instructional units were developed by 10 instructors, experienced in
804 pre-service vocational teacher education. Twelve one-half hour recorded tele-
805 vision lessons were presented, in four separate classes, to 60 inexperienced,
806 potential vocational teachers, recruited from trades and industries, in widely
807 separated areas in Minnesota and followed with seminar discussions. The
808 instructional units were evaluated and revised, video tapes transferred to film,
809 and a teaching guide developed for each unit. The units included: Teaching in
810 Vocational-Technical Schools, Analyzing for Instruction, Organizing Course
811 Components, Planning the Lesson, Teaching for Understanding, Teaching for Motor-
812 Skill Development, Teaching With Instructional Aids, Developing Instructional
813 Aids, Evaluating Instructional Outcomes, Developing Evaluative Materials,
814 Managing Teaching-Learning Facilites, Planning your Teaching Career.
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